WHAT IS CLAIMED IS:

1.   An extended bandwidth HomePhoneline Network Alliance system,
comprising:

5   a transmitter configured to transmit an extended bandwidth signal, the
             extended bandwidth signal having a bandwidth greater than a
             bandwidth of a signal that conforms to the bandwidth limitations
             of a HomePhoneline Networking Alliance 2.0 specification.

10 2.   The system of claim 1, wherein the extended bandwidth signal has a
bandwidth of 12 MHz.

3.   The system of claim 2, wherein the 12 MHz bandwidth of the extended
bandwidth signal spans the frequencies from 4 MHz to 16 MHz.

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4.   The system of claim 1, wherein the bandwidth of the extended bandwidth
signal is greater than 6 MHz.

5.   The system of claim 1, wherein the bandwidth of the extended bandwidth
20 signal includes more than one and one half copies of a spectrum of a 4 Million
symbols per second (Mbaud) signal.

6. The system of claim 1, wherein the bandwidth of the extended bandwidth signal includes three copies of a spectrum of a 4 Million symbols per second (Mbaud) signal.

5 7. The system of claim 1, wherein the bandwidth of the extended bandwidth signal includes more than three copies of a spectrum of a 2 Million symbols per second (Mbaud) signal.

8. The system of claim 1, wherein the bandwidth of the extended bandwidth

10 signal includes six copies of a spectrum of a 2 Million symbols per second (Mbaud) signal.

9. The system of claim 1, wherein the spectral content of the extended bandwidth signal is such that a HomePhoneline Networking Alliance

15 (HomePNA) 2.0 receiver in 2 Mbaud mode is able to train on the extended bandwidth signal and determine that the extended bandwidth signal is not intended for the HomePNA 2.0 receiver in 2 Mbaud mode.

10. The system of claim 1, further comprising a transmission medium and a

20 receiver configured to receive the extended bandwidth signal from the transmitter via the transmission medium.

11.   The system of claim 10, wherein the receiver is further configured to train on the extended bandwidth signal and to decode the extended bandwidth signal to recover data included in the extended bandwidth signal.

5   12.   The system of claim 1, wherein the transmitter includes a module configured to upsample a 2 Mbaud signal to an 8 Mbaud signal, a 1 MHz modulator configured to modulate the 8 Mbaud signal with a 1 MHz signal, a pulse shaping filter configured to filter the output of the 1 MHz modulator such that the filtered signal has a 12 MHz wide baseband spectrum, and a 10 MHz

10   modulator configured to modulate the filtered signal by a 10 MHz carrier signal.

13.   The system of claim 12, wherein the module configured to upsample the 2 Mbaud signal to the 8 Mbaud signal is a zero-padder.

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14.   An extended bandwidth HomePNA system, comprising:

        means for generating an extended bandwidth signal, the extended bandwidth signal having a bandwidth greater than a bandwidth of a signal the conforms to a HomePhoneline Networking Alliance 2.0

20   specification.

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15.   A method for generating a training sequence for training a receiver, comprising the steps of:

upsampling a 2 Mbaud signal to an 8 Mbaud signal;

modulating the 8 Mbaud signal with a 1 MHz signal;

5   filtering the modulated 8 Mbaud signal to produce a filtered signal

having a 12 MHz wide baseband spectrum; and

modulating the filtered signal with a 10 MHz carrier signal to produce the

training sequence.

10   16.   The method of claim 15, wherein the step of upsampling includes

inserting three zeros after each symbol in the 2 Mbaud sequence.

17.   The method of claim 15, wherein the receiver is configured to train on a

HomePhoneline Networking Alliance 2.0 training sequence.

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18.   The method of claim 15, wherein the receiver is configured to train on an

extended bandwidth HomePhoneline Networking Alliance training sequence.

19.   The method of claim 15, wherein the training sequence has a spectrum

20   that includes six copies of a spectrum of the 2 Mbaud signal.

20.   The method of claim 15, wherein a first half of a spectrum of the training

sequence spans a frequency range that matches a frequency range of a

HomePhoneline Networking Alliance 2.0 specification.